

Amendments to the Specification

Please replace the paragraph at page 6, lines 20 through 22 with the following new and amended paragraphs:

Fig. 3 is an index of Figs. 3a - 3j.

Figs. 3a - 3dj are a set of tables illustrating a preferred embodiment of part of the conceptual data model (third tier) for a shell and tube heat exchanger equipment class used in the embodiment of Fig. 2.

Please replace the paragraph at page 6, lines 23 through 25 with the following new and amended paragraphs:

Fig. 4 is an index of Figs. 4a - 4y.

Figs. 4a - 4ky are a set of tables illustrating a preferred embodiment of the composite class view (second tier) for the shell and tube heat exchanger in the embodiment of Fig. 2.

Please replace the paragraph at page 6, lines 26 through 28 with the following new and amended paragraphs:

Fig. 5 is an index of Figs. 5a - 5e.

Figs. 5a - 5be are a set of tables illustrating a preferred embodiment of two typical application class views (first tier) for shell and tube heat exchangers such as in the Fig. 2 embodiment.

Please replace the paragraph at page 9, lines 3 through 12 with the following amended paragraph:

To further illustrate the model representation of equipment items 26, Figs. 3a - 3j, 4a - 4y and 5a - 5e present a preferred embodiment of the three-tier data schema for the specific

equipment type called "Shell and Tube Heat Exchanger" 32. Beginning with the conceptual model 18 (Tier I), Figs. 3a - 3d provide a representation of the structure and attributes part of the model 18 for a shell and tube heat exchanger equipment class 32. The illustrated shell and tube heat exchanger class 32 defines attributes by name 42, representation type 44 (i.e., real number, character string, table, etc.), quantity type 46 (units or format of measurement, e.g. flow rate mass, flow rate volume, flow rate moles, percentage, temperature, pressure, concentration mole/mole, etc.) and a description 48. This representation is only part of the conceptual data model 18.

Please replace the paragraph at page 9, lines 13 through 16 with the following amended paragraph:

Figs. 4a - 4ky illustrate a table 34 of the attributes for a composite view 30 for a shell and tube heat exchanger 32. The "Route" column 36 in the table lists the attribute mappings between the conceptual data model 18 (Tier III) and the composite class view (Tier II) attributes 34.

Please replace the paragraph at page 9, lines 17 through 21 with the following amended paragraph:

Figs. 5a and 5b is show a table 38 of some of the attributes for a specific application 22 class view 20 (Tier I), corresponding to that of a mechanical equipment data sheet view for a shell and tube exchanger 32. The "Link" column 39 in the table lists the attribute mappings between the composite class view (table 34 of Figs. 4a - 4ky) and the application class view attributes 38.

Please replace the paragraph at page 9, lines 22 through 26 with the following amended paragraph:

Figs. 5b - 5e ~~is~~ show a table 37 of some of the attributes for an alternative application class view 20 (Tier I), corresponding to that of a thermal design calculation program 22 view for a shell and tube exchanger 32. The "Link" column 35 in the table lists the attribute mappings between the composite class view (table 34 of Figs. 4a - 4k~~y~~) and this particular application class view attributes 37.

Replacement Drawings

Enclosed are replacement drawings consisting of 48 sheets, Figs. 1 - 8. These drawings replace the originally-filed informal drawings as follows.

Replacement Figs. 3a -3j show the same structure and attributes as the original informal Figs. 3a - 3d. Fig. 3 is added to provide an index for replacement Figs. 3a - 3j.

Replacement Figs. 4a - 4y show the same table 34 as the original informal Figs. 4a - 4k. Fig. 4 is added to provide an index for replacement Figs. 4a - 4y.

Replacement Figs. 5a and 5b show the same table 38 as the original informal Fig. 5a.

Replacement Figs. 5c - 5e show the same table 37 as original informal Fig. 5b. Fig. 5 is added to provide an index for replacement Figs. 5a - 5e.

Attachment: Replacement Sheets